TITLE: Vapourized Accelerated Hydrogen Peroxide: Clinical Effectiveness, Safety, and Guidelines

DATE: 15 September 2011

RESEARCH QUESTIONS

1. What is the clinical effectiveness of using the fogging method with vapourized accelerated hydrogen peroxide for terminal cleaning and disinfection in healthcare facilities?

2. What is the clinical evidence on the safety of using the fogging method with vapourized accelerated hydrogen peroxide for terminal cleaning and disinfection in healthcare facilities?

3. What are the evidence-based guidelines and recommendations for the use of the fogging method with vapourized accelerated hydrogen peroxide for terminal cleaning and disinfection in healthcare facilities?

KEY MESSAGE

Evidence indicates that use of vapourized accelerated hydrogen peroxide decontamination is safe and effective for the prevention of nosocomial infections in clinical settings.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2010, Issue 8), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No methodological filters were applied to limit retrieval by publication type. The search was limited to English language documents published between January 1, 2006 and Sept 1, 2011. Internet links were provided, where available.
The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

One systematic review, four non-randomized studies (NRS), and one evidence-based guideline were identified pertaining to the use of the fogging method with vapourized accelerated hydrogen peroxide (HPV) for terminal cleaning and disinfection in healthcare facilities. No relevant health technology assessment reports or randomized controlled trials were identified. Additional information that may be of interest, including studies examining surrogate outcomes, is provided in the appendix.

OVERALL SUMMARY OF FINDINGS

One systematic review\(^1\) found that use of hydrogen peroxide vapour as an environmental disinfectant in clinical settings resulted in control of nosocomial outbreaks, eradication of methicillin-resistant *Staphylococcus aureus* (MRSA) contamination, and decreased *Clostridium difficile* (*C. difficile*) infection. One NRS\(^2\) reported that cases of *Acinetobacter* were eradicated for three months in the intensive care unit, following HPV decontamination. Another study\(^3\) reported that nosocomial infections with multi-drug resistant *Acinetobacter baumannii* ceased following HPV decontamination. Two studies\(^4,5\) reported that incidence of nosocomial *C. difficile* decreased (one significantly)\(^4\) following HPV decontamination.

A guideline from the Ontario Provincial Infectious Diseases Advisory Committee (PIDAC)\(^6\) advocates the use of HPV during outbreaks when other control measures have failed, but does not recommend routine use of HPV due to the amount of time the process requires and the cost of the technology. The guideline also states that by-products of the decontamination process are safe.

Overall, use of HPV decontamination was found to be safe and effective in the prevention of nosocomial infections.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified

Systematic Reviews and Meta-analyses


Randomized Controlled Trials
No literature identified

Non-Randomized Studies


Guidelines and Recommendations

APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies (surrogate outcomes)


Review articles


Additional references
